PTO/SB/21 (09-04)
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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. **Application Number** 10/713,595 TRANSMITTAL November 14, 2004 Filing Date **FORM** First Named Inventor Braun et al. Art Unit 2674

(to be used for all correspondence	after initial filing)	Examiner Name		Not Yet As	signed
Total Number of Pages in This Sub	T	Attorney Docket N	umber	IMM078C (51851/294820)
	ENCL	OSURES (check all tha	t apply)		
Fee Transmittal Form	☐ Drawing(After Allo	wance Communication to TC
Fee Attached	Licensing	g-related Papers			ommunication to Board
Amendment / Reply	Petition				ommunication to TC otice, Brief, Reply Brief)
After Final		o Convert to a nal Application	ļ	☐ Proprieta	ry Information
Affidavits/declaration(s)		Attorney, Revocation of Correspondence Add	ress	Status Le	etter
Extension of Time Request	Terminal	Disclaimer		Other En	nclosure(s) entify below):
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Information Disclosure Statem		ndscape Table on CD		Return r oste	alu .
Certified Copy of Priority Document(s)	Remarks				
Reply to Missing Parts/					
Incomplete Application					
Reply to Missing Parts under 37 CFR1.52 or 1.5	3				
	SIGNATURE OF	APPLICANT, ATTO	RNEY, O	RAGENT	
Firm	Kilpatick S	tockton LLP			
Signature		11-			
Printed Name	John C. Ale	emanni			
Date	December	<u>27</u> ,2004	Reg. No.	47,384	
	CERTIFIC	ATE OF TRANSMISS	SION/MAI	LING	
I hereby certify that this corresponding service with sufficient postage Alexandria, VA 22313-1450 on the	as first class mail	in an envelope addre	he USPTO ssed to: C	or deposited Commissioner	with the United States Postal for Patents, P.O. Box 1450,
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Typed or printed name Kay	Parmer			Date	December <u>37</u> , 2004

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Braun et al.

Ser. No.

10/713,595

Filing Date

November 14, 200

For:

Host Cache for Haptic Feedback Effects

Examiner

Not Yet Assigned

Art Unit

2674

Atty. Docket:

IMM078C

Mail Stop: **AMENDMENT Commissioner For Patents** P.O. Box 1450 Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Enclosed is a copy of PTO/SB/08a and Supplemental PTO/SB/08a submitted in the parent application. It is respectfully requested that the references listed on the attached forms PTO/SB/08a be expressly considered by the Examiner, made of record in the application, and appear among the "References Cited" on any patent to issue therefrom. Since the IDS submitted in the parent application complied with 37 CFR 1.98, copies of the patents, publications, pending U.S. applications, and other information have not been resubmitted in this continuing application.

For several of the documents listed in "Other Documents," the date, which is shown on the document, is listed. Applicants make no representation as to the publication date, if any, of the document.

Applicants do not represent or admit that any document listed is prior art or material, and Applicants reserve the right to challenge any assertion that a document listed is prior art or material. Further, Applicants reserve the right to establish patentability over the listed documents.

It is respectfully requested that the references listed on the attached form PTO/SB/08a be

expressly considered by the Examiner, made of record in the application, and appear among the

"References Cited" on any patent to issue therefrom.

This Information Disclosure Statement ("IDS") is being submitted prior to the mailing of

a first Office Action on the merits in this application. Accordingly, it is believed that no fees are

due for consideration of this IDS. However, should any fees be due under 37 C.F.R. §1.16 or

§1.17 or otherwise, the Commissioner is hereby authorized to charge these fees and any other

additional fees which may be required during the entire pendency of this application, or to credit

any overpayment, to Deposit Account No. 16-1435. A duplicate of this sheet is attached for that

purpose.

Dated: December 27, 2004

Respectfully submitted,

Jøhn C. Alemanni

Registration No. 47,384

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Winston-Salem, North Carolina 27101

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Substitute for form 1449B/PTO
INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Complete if Known

Application Number 10/060,472

Filing Date January 29, 2002

First Named Inventor BRAUN, et al.

Art Unit 2186

Examiner Name Anderson, Matthew D.

(use as many sheets as necessary)

 Sheet
 1
 of
 1
 Attorney Docket Number
 (IMM 078B)
 51851-280457

			U.S. PATENT DOC	UMENTS	
		Document Number			
Examiner	Cite No. ¹	Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	6,219,034	4/17/01	Elbing, et al.	

F	0.11-	Fore	ign Patent Do	cument		Name of Patentee or	Pages, Columns, Lines,
Examiner Initials*	Cite No. ¹	Country Code ³	Number ⁴	Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear
	2	JP	H1-3664 (H-2 1852	78)	7/19/1990	Taito Corporation	1
	3	JP	H2-109714 (H4-8381)		1/13/1992	Epoch Co. and Key- Planning Co.	1
	4	JP	H5-193862 (H7-24147		1/27/1995	Sega Corporation	1
	5	JР	H4-007371 (H5-19244		8/3/1993	Taito Corporation	1

Examiner Initials * Cite No. 1 Cite No. 1 CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published. SCANNELL, "Taking a Joystick Ride," Computer Currents, Boston Edition, Vol. 9, No. 11, November 1994.

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 5

	Complete if Known					
Application Number	10/060,472					
Filing Date	January 29, 2002					
First Named Inventor	Adam C. Braun, et al.					
Group Art Unit	2186					
Examiner Name	Anderson, Matthew D.					
Attorney Docket Number	IMM078B					

	г –	Document Number	U.S. PATENT DOC	Name of Patentee or	
Examiner	Cite No.	Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	AA	3,220,121	11/30/1965	Cutler	
	AB	3,517,446	6/30/1970	Corlyon et al.	
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	AD	4,236,325	10/2/1980	Hall et al.	
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-	AR	3,902,687	6/25/1973	Hightower	
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	AT	4,581,491	4/8/1986	Boothroyd	
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	BG	5,186,685	2/16/1993	Mangseth et al.	
	вн	6,422,941	7/23/2002	Thomer et al.	
	ВІ	6,111,577	8/29/2000	Zilles et al.	

Examiner	Date]
Signature	Considered	J

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¹ Applicant's unique citation designation number (optional). ² Kinds of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449A/PTO Complete if Known **Application Number** 10/060,472 INFORMATION DISCLOSURE Filing Date January 29, 2002 STATEMENT BY APPLICANT First Named Inventor Adam C. Braun, et al. Group Art Unit 2186 (use as many sheets as necessary) **Examiner Name** Anderson, Matthew D. Sheet of Attorney Docket Number IMM078B

Examiner Cite		F	oreign Patent Do	cument	Publication Date	Name of Patentee or	Pages, Columns, Lines,	
Initials*	No.1	Country Code ³	Number ⁴	Kind Code ^s (if known)	MM-DD-YYYY	Applicant of Cited Document	Where Relevant Passages or Relevant Figures Appear	
	BJ	EP	EP0349086		1/31/1990	Visser		

Examiner	Date	
Signature	Considered	

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¹ Applicant's unique citation designation number (optional). ² Kinds of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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,Substitut	e for form 1449A	VPTO		Complete if Known		
	INFORMATION DISCLOSURE			Application Number	10/060,472	
INFC	PRMATIC	ON DIS	CLOSURE	Filing Date	January 29, 2002	
STA	STATEMENT BY APPLICANT		First Named Inventor	Adam C. Braun, et al.		
				Group Art Unit	2186	
	(use as many sheets as necessary)		Examiner Name	Anderson, Matthew D.		
Sheet	3	of	5	Attorney Docket Number	IMM078B	

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
	вк	BAIGRIE, "Electric Control Loading – A Low Cost, High Performance Alternative," Proceedings, pp. 247-254, November 6-8, 1990.	
	BL	IWATA, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp 287-292, 1993.	
	ВМ	RUSSO, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," MIT Libraries Archives 08/14/1990, pp. 1-131, May 1990.	
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	во	JONES et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Vertag); Experimental Brain Research, Vol. 79, No. 1, pp. 150-156, 1990.	
	ВР	BURDEA et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993.	
	BQ	SNOW et al., "Model-X Force-Reflecting-Hand-Controller," NT Control no. MPO-17851; JPL Case No. 5348, pp. 1-4, 06/15/1989.	
	BR	OUH-YOUNG, "Force Display in Molecular Docking," Order No. 9034744, p. 1-369, 1990.	
	BS	TADROS, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators, MIT Archive® Massachusetts Institute of Technology, pp. 1-88, February 1990.	
	вт	CALDWELL et al., "Enhanced Tactile Feedback (Tele-Traction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993.	
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	BV	GOTOW et al, "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337	
	BW	STANLEY et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSV-Vol. 42, Advances in Robotics, pp. 55-61, ASME 1992.	
	вх	RUSSO, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, Advances in Robotics, pp. 63-70, ASME 1992.	

Examiner	Date	
Signature	Considered	J

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Substitute for form 1449A/PTO				Complete if Known		
				Application Number	10/060,472	
INFC	PRMATION	DIS	CLOSURE	Filing Date	January 29, 2002	
STA	TEMENT B	Y A	PPLICANT	First Named Inventor	Adam C. Braun, et al.	
				Group Art Unit	2186	
	(use as many sheets as necessary)			Examiner Name	Anderson, Matthew DS.	
Sheet	4	of	5	Attorney Docket Number	IMM078B	

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
	BY	KONTARINIS et al., "Display of High-Frequency Tactile Information to Teleoperators," Telemanipulator Technology and Space Telerobotics, Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993.	<u> </u>
	BZ	PATRICK et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," Cooperative Intelligent Robotics in Space, Rui J. deFigueiredo et al., Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990.	
	CA	ADELSTEIN, "A Virtual Environment System For The Study of Human Arm Tremor," Ph.D. Dissertation, Dept. of Mechanical Engineering, MIT, June 1989.	,
	СВ	BEJCZY, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," Science, Vol. 208, No. 4450, pp. 1327-1335, 1980.	
	СС	BEJCZY, "Generalization of Bilateral Force-Reflecting Control of Manipulators," Proceedings Of Fourth CISM-IFToMM, Sep. 8-12, 1981.	
	CD	MCAFFEE, "Teleoperator Subsystem/Telerobot Demonsdtrator: Force Reflecting Hand Controller Equipment Manual," JPL D-5172, pp. 1-50, A1-A36, B1-B5, C1-C36, January 1988.	
	CE	MINSKY, "Computational Haptics: The Sandpaper System for Synthesizing Textue for a Force-Feedback Display," Ph.D. Dissertation, MIT, June 1995.	
	CF	JACOBSEN et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," Intervention/ROV '91 Conference & Exposition, Hollywood, Florida, May 21-23, 1991.	
	CG	SHIMOGA, *Finger Force and Touch Feedback Issues in Dexterous Telemanipulation,* Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration, Rensselaer Polytechnic Institute, Sep. 30 - Oct. 1, 1992.	
	СН	IBM Technical Disclosure Bullein, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990.	
	CI	TERRY et al., "Tactile Feedback In A Computer Mouse," Proceedings of Fourteenth Annual Northeast Bioengineering Conference, University of New Hampshire, March 10-11, 1988.	
	C1	HOWE, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," Proceedings of the 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 1992.	
	СК	EBERHARDT et al., *OMAR – A Haptic display for speech perception by deaf and def-blind individuals," IEEE Virtual Reality Annual International Symposium, Seattle, WA, Sep. 18-22, 1993.	
	CL	RABINOWITZ et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," Journal of The Accoustical Society of America, Vol. 82, No. 4, October 1987.	

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Examiner		Date	
Signature		Considered	
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Substitute	e for form 1449A/PTC)		Complete if Known		
				Application Number	10/060,472	
INFO	RMATION	DIS	CLOSURE	Filing Date	January 29, 2002	
STATEMENT BY APPLICANT				First Named Inventor	Adam C. Braun, et al.	
				Group Art Unit	2186	
(use as many sheets as necessary)				Examiner Name	Anderson, Matthew D.	
Sheet	5	of	5	Attorney Docket Number	IMM078B	

_		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
	СМ	BEJCZY et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," International Computer Technology Conference, The American Society of Mechanical Engineers, San Francisco, CA, August 12-15, 1980.	
	CN	BEJCZY et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," SOAR '89 Workshop, JSC, Houston, TX, July 25-27, 1989.	
	со	OUH-YOUNG, "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," IEEE Transactions on Consumer Electronics, Vol. 41, No. 3, August 1995.	
	СР	MARCUS, "Touch Feedback in Surgery," Proceedings of Virtual Reality and Medicine The Cutting Edge, Sep. 8-11, 1994.	
	cq	BEJCZY, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987.	
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	cs	EBERHARDT et al., "Including Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1, ASME 1994.	
	СТ	GOBEL et al., "Tactile Feedback Applied to Computer Mice," International Journal of Human-Computer Interaction, Vol. 7, No. 1, pp. 1-24, 1995.	
	cu	PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.	
	cv	*Cyberman Technical Specification,* Logitech Cyberman SWIFT Supplement, 4/5/1994.	
	cw	OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95, Seoul, Korea, 21-24 August 1995.	
	сх	KACZMAREK et al., "Tactile Displays," Virtual Environment Technologies.	

1	Examiner	Date	
ı	Signature	Considered	J

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